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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: I:\Projects\Active\Wheatland\Johnson Rancho\Technical Reports\Air Quality\Hop Farm\hop farm.urb924

Project Name: Hop Farm

Project Location: Feather River AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	42.04	6.04	92.58	0.26	13.36	12.86	7,805.34

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	20.67	19.44	198.94	0.53	92.71	17.52	54,741.54

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	62.71	25.48	291.52	0.79	106.07	30.38	62,546.88

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.34	4.40	1.96	0.00	0.01	0.01	5,603.12
Hearth	15.78	1.55	83.06	0.26	13.33	12.83	2,189.93
Landscape	1.30	0.09	7.56	0.00	0.02	0.02	12.29
Consumer Products	17.10						
Architectural Coatings	7.52						
TOTALS (tons/year, unmitigated)	42.04	6.04	92.58	0.26	13.36	12.86	7,805.34

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	8.08	7.57	78.09	0.21	36.39	6.88	21,514.34
Apartments low rise	0.75	0.69	7.07	0.02	3.30	0.62	1,948.54
Elementary school	0.52	0.27	2.75	0.01	1.25	0.24	739.80
Junior high school	0.91	0.54	5.49	0.01	2.53	0.48	1,494.13
Employment	3.73	3.70	37.67	0.10	17.57	3.32	10,366.14
commercial	6.68	6.67	67.87	0.18	31.67	5.98	18,678.59
TOTALS (tons/year, unmitigated)	20.67	19.44	198.94	0.53	92.71	17.52	54,741.54

Operational Settings:

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Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00 Nonresidential Trip % Reduction: 0.00

Analysis Year: 2035 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	569.67	9.09	dwelling units	1,709.00	15,534.81	116,282.13
Apartments low rise	12.88	6.83	dwelling units	206.00	1,406.98	10,531.61
Elementary school		1.29	students	600.00	774.00	3,998.42
Junior high school		1.62	students	900.00	1,458.00	8,093.40
Employment		112.00	acres	77.30	8,657.60	56,153.64
commercial		400.00	acres	39.00	15,600.00	101,182.40
					43,431.39	296,241.60

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	39.9	0.0	100.0	0.0
Light Truck < 3750 lbs	19.1	0.0	99.5	0.5
Light Truck 3751-5750 lbs	19.7	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	80.0	20.0
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.6	0.0	18.8	81.2

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Vehicle Type	Vehicle Fleet Mix					Diesel
	Percent Type	Non-Catalyst	Catalyst			
Heavy-Heavy Truck 33,001-60,000 lbs	1.6	0.0	0.0			100.0
Other Bus	0.1	0.0	0.0			100.0
Urban Bus	0.0	0.0	0.0			0.0
Motorcycle	4.0	32.5	67.5			0.0
School Bus	0.1	0.0	0.0			100.0
Motor Home	1.2	0.0	91.7			8.3
	<u>Travel Conditions</u>					
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
Junior high school				20.0	10.0	70.0
Employment				35.0	17.5	47.5
commercial				35.0	17.5	47.5

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: I:\Projects\Active\Wheatland\Johnson Rancho\Technical Reports\Air Quality\Hop Farm\hop farm.urb924

Project Name: Hop Farm

Project Location: Feather River AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	151.16	25.08	94.76	0.00	0.28	0.28	30,838.55

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	110.27	92.58	1,064.27	3.02	508.02	95.99	313,277.47

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	261.43	117.66	1,159.03	3.02	508.30	96.27	344,116.02

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	1.86	24.12	10.74	0.00	0.05	0.05	30,702.01
Hearth - No Summer Emissions							
Landscape	14.40	0.96	84.02	0.00	0.23	0.23	136.54
Consumer Products	93.69						
Architectural Coatings	41.21						
TOTALS (lbs/day, unmitigated)	151.16	25.08	94.76	0.00	0.28	0.28	30,838.55

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	43.52	36.01	418.79	1.19	199.42	37.69	123,116.76
Apartments low rise	4.10	3.26	37.93	0.11	18.06	3.41	11,150.62
Elementary school	3.37	1.29	14.56	0.04	6.86	1.30	4,233.52
Junior high school	5.72	2.59	29.13	0.08	13.88	2.62	8,551.01
Employment	19.23	17.64	201.24	0.57	96.29	18.19	59,326.33
commercial	34.33	31.79	362.62	1.03	173.51	32.78	106,899.23
TOTALS (lbs/day, unmitigated)	110.27	92.58	1,064.27	3.02	508.02	95.99	313,277.47

Operational Settings:

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Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00 Nonresidential Trip % Reduction: 0.00

Analysis Year: 2035 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	569.67	9.09	dwelling units	1,709.00	15,534.81	116,282.13
Apartments low rise	12.88	6.83	dwelling units	206.00	1,406.98	10,531.61
Elementary school		1.29	students	600.00	774.00	3,998.42
Junior high school		1.62	students	900.00	1,458.00	8,093.40
Employment		112.00	acres	77.30	8,657.60	56,153.64
commercial		400.00	acres	39.00	15,600.00	101,182.40
					43,431.39	296,241.60

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	39.9	0.0	100.0	0.0
Light Truck < 3750 lbs	19.1	0.0	99.5	0.5
Light Truck 3751-5750 lbs	19.7	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	80.0	20.0
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.6	0.0	18.8	81.2

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Vehicle Type	<u>Vehicle Fleet Mix</u>			
	Percent Type	Non-Catalyst	Catalyst	Diesel
Heavy-Heavy Truck 33,001-60,000 lbs	1.6	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.0	32.5	67.5	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.2	0.0	91.7	8.3
<u>Travel Conditions</u>				
Urban Trip Length (miles)	Residential			
	Home-Work	Home-Shop	Home-Other	Commute
	10.8	7.3	7.5	9.5
	16.8	7.1	7.9	14.7
Rural Trip Length (miles)	Commercial			
	Home-Work	Home-Shop	Home-Other	Commute
Trip speeds (mph)	35.0	35.0	35.0	35.0
	32.9	18.0	49.1	
<u>% of Trips - Residential</u>				
<u>% of Trips - Commercial (by land use)</u>				
Elementary school			20.0	10.0
Junior high school			20.0	10.0
Employment			35.0	17.5
commercial			35.0	17.5

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Combined Winter Emissions Reports (Pounds/Day)

File Name: I:\Projects\Active\Wheatland\Johnson Rancho\Technical Reports\Air Quality\Hop Farm\hop farm.urb924

Project Name: Hop Farm

Project Location: Feather River AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	522.00	70.31	2,040.07	6.32	325.89	313.68	94,735.92

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	119.14	134.47	1,141.84	2.71	508.02	95.99	273,305.91

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	641.14	204.78	3,181.91	9.03	833.91	409.67	368,041.83

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Natural Gas	1.86	24.12	10.74	0.00	0.05	0.05	30,702.01
Hearth	385.24	46.19	2,029.33	6.32	325.84	313.63	64,033.91
Landscaping - No Winter Emissions							
Consumer Products	93.69						
Architectural Coatings	41.21						
TOTALS (lbs/day, unmitigated)	522.00	70.31	2,040.07	6.32	325.89	313.68	94,735.92

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO ₂	PM ₁₀	PM ₂₅	CO ₂
Single family housing	45.77	52.36	446.06	1.07	199.42	37.69	107,426.94
Apartments low rise	4.14	4.74	40.40	0.10	18.06	3.41	9,729.60
Elementary school	1.79	1.87	16.12	0.04	6.86	1.30	3,694.01
Junior high school	3.50	3.75	32.04	0.07	13.88	2.62	7,458.98
Employment	22.82	25.61	216.72	0.51	96.29	18.19	51,749.58
commercial	41.12	46.14	390.50	0.92	173.51	32.78	93,246.80
TOTALS (lbs/day, unmitigated)	119.14	134.47	1,141.84	2.71	508.02	95.99	273,305.91

Operational Settings:

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Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00 Nonresidential Trip % Reduction: 0.00

Analysis Year: 2035 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	569.67	9.09	dwelling units	1,709.00	15,534.81	116,282.13
Apartments low rise	12.88	6.83	dwelling units	206.00	1,406.98	10,531.61
Elementary school		1.29	students	600.00	774.00	3,998.42
Junior high school		1.62	students	900.00	1,458.00	8,093.40
Employment		112.00	acres	77.30	8,657.60	56,153.64
commercial		400.00	acres	39.00	15,600.00	101,182.40
					43,431.39	296,241.60

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	39.9	0.0	100.0	0.0
Light Truck < 3750 lbs	19.1	0.0	99.5	0.5
Light Truck 3751-5750 lbs	19.7	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	80.0	20.0
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.6	0.0	18.8	81.2

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Vehicle Fleet Mix						
Vehicle Type	Percent Type	Non-Catalyst	Catalyst			Diesel
Heavy-Heavy Truck 33,001-60,000 lbs	1.6	0.0	0.0			100.0
Other Bus	0.1	0.0	0.0			100.0
Urban Bus	0.0	0.0	0.0			0.0
Motorcycle	4.0	32.5	67.5			0.0
School Bus	0.1	0.0	0.0			100.0
Motor Home	1.2	0.0	91.7			8.3
Travel Conditions						
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
	10.8	7.3	7.5	9.5	7.4	7.4
	16.8	7.1	7.9	14.7	6.6	6.6
	35.0	35.0	35.0	35.0	35.0	35.0
Trip speeds (mph)						
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
Junior high school				20.0	10.0	70.0
Employment				35.0	17.5	47.5
commercial				35.0	17.5	47.5

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Combined Annual Emissions Reports (Tons/Year)

File Name: I:\Projects\Active\Wheatland\Johnson Rancho\Technical Reports\Air Quality\Johnson Rancho\Johnson Rancho.urb924

Project Name: Johnson Rancho

Project Location: Feather River AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	264.56	39.40	603.15	1.68	87.07	83.81	50,983.13

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	88.91	83.50	857.23	2.30	399.47	75.48	235,978.77

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	353.47	122.90	1,460.38	3.98	486.54	159.29	286,961.90

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM2.5	CO2
Natural Gas	2.22	28.72	12.43	0.00	0.05	0.05	36,629.88
Hearth	102.90	10.12	541.33	1.68	86.89	83.63	14,273.79
Landscape	8.86	0.56	49.39	0.00	0.13	0.13	79.46
Consumer Products	111.44						
Architectural Coatings	39.14						
TOTALS (tons/year, unmitigated)	264.56	39.40	603.15	1.68	87.07	83.81	50,983.13

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	57.30	53.67	553.84	1.49	258.12	48.78	152,589.45
Apartments low rise	1.31	1.20	12.36	0.03	5.76	1.09	3,405.22
Elementary school	2.60	1.36	13.76	0.04	6.26	1.18	3,698.99
Junior high school	0.91	0.54	5.49	0.01	2.53	0.48	1,494.13
Employment	9.50	9.44	96.00	0.26	44.79	8.46	26,418.23
Commercial	17.29	17.29	175.78	0.47	82.01	15.49	48,372.75
TOTALS (tons/year, unmitigated)	88.91	83.50	857.23	2.30	399.47	75.48	235,978.77

Operational Settings:

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Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00 Nonresidential Trip % Reduction: 0.00

Analysis Year: 2035 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	4,040.33	9.09	dwelling units	12,121.00	110,179.89	824,725.41
Apartments low rise	22.50	6.83	dwelling units	360.00	2,458.80	18,404.76
Elementary school		1.29	students	3,000.00	3,870.00	19,992.11
Junior high school		1.62	students	900.00	1,458.00	8,093.40
Employment		112.00	acres	197.00	22,064.00	143,108.23
Commercial		400.00	acres	101.00	40,400.00	262,036.47
					180,430.69	1,276,360.38

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	39.9	0.0	100.0	0.0
Light Truck < 3750 lbs	19.1	0.0	99.5	0.5
Light Truck 3751-5750 lbs	19.7	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	80.0	20.0
Life-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.6	0.0	18.8	81.2

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Vehicle Type	<u>Vehicle Fleet Mix</u>			
	Percent Type	Non-Catalyst	Catalyst	Diesel
Heavy-Heavy Truck 33,001-60,000 lbs	1.6	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.0	32.5	67.5	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.2	0.0	91.7	8.3
<u>Travel Conditions</u>				
	Residential			Commercial
	Home-Work	Home-Shop	Home-Other	Commute
	10.8	7.3	7.5	9.5
	16.8	7.1	7.9	14.7
Urban Trip Length (miles)				7.4
Rural Trip Length (miles)				6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1	
% of Trips - Commercial (by land use)				
Elementary school			20.0	10.0
Junior high school			20.0	10.0
Employment			35.0	17.5
Commercial			35.0	17.5
				70.0
				70.0
				47.5
				47.5

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: I:\Projects\Active\Wheatland\Johnson Rancho\Technical Reports\Air Quality\Johnson Rancho\Johnson Rancho.urb924

Project Name: Johnson Rancho

Project Location: Feather River AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	935.65	163.59	616.95	0.02	1.76	1.75	201,594.50

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	476.32	397.47	4,590.47	13.07	2,188.86	413.60	1,350,440.29

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	1,411.97	561.06	5,207.42	13.09	2,190.62	415.35	1,552,034.79

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM2.5	CO2
Natural Gas	12.14	157.39	68.14	0.00	0.30	0.30	200,711.66
Hearth - No Summer Emissions							
Landscape	98.41	6.20	548.81	0.02	1.46	1.45	882.84
Consumer Products	610.61						
Architectural Coatings	214.49						
TOTALS (lbs/day, unmitigated)	935.65	163.59	616.95	0.02	1.76	1.75	201,594.50

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	308.68	255.42	2,970.28	8.46	1,414.37	267.29	873,199.67
Apartments low rise	7.17	5.70	66.29	0.19	31.56	5.96	19,486.53
Elementary school	16.85	6.47	72.81	0.20	34.29	6.48	21,167.59
Junior high school	5.72	2.59	29.13	0.08	13.88	2.62	8,551.01
Employment	49.00	44.96	512.87	1.46	245.41	46.36	151,193.89
Commercial	88.90	82.33	939.09	2.68	449.35	84.89	276,841.60
TOTALS (lbs/day, unmitigated)	476.32	397.47	4,590.47	13.07	2,188.86	413.60	1,350,440.29

Operational Settings:

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Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00 Nonresidential Trip % Reduction: 0.00

Analysis Year: 2035 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	4,040.33	9.09	dwelling units	12,121.00	110,179.89	824,725.41
Apartments low rise	22.50	6.83	dwelling units	360.00	2,458.80	18,404.76
Elementary school		1.29	students	3,000.00	3,870.00	19,992.11
Junior high school		1.62	students	900.00	1,458.00	8,093.40
Employment		112.00	acres	197.00	22,064.00	143,108.23
Commercial		400.00	acres	101.00	40,400.00	262,036.47
					180,430.69	1,276,360.38

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	39.9	0.0	100.0	0.0
Light Truck < 3750 lbs	19.1	0.0	99.5	0.5
Light Truck 3751-5750 lbs	19.7	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	80.0	20.0
Life-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.6	0.0	18.8	81.2

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Vehicle Type	<u>Vehicle Fleet Mix</u>			
	Percent Type	Non-Catalyst	Catalyst	Diesel
Heavy-Heavy Truck 33,001-60,000 lbs	1.6	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.0	32.5	67.5	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.2	0.0	91.7	8.3
<u>Travel Conditions</u>				
Urban Trip Length (miles)	Residential			
	Home-Work	Home-Shop	Home-Other	Commute
	10.8	7.3	7.5	9.5
	16.8	7.1	7.9	14.7
Rural Trip Length (miles)	Commercial			
	Home-Work	Home-Shop	Home-Other	Commute
Trip speeds (mph)	35.0	35.0	35.0	35.0
	32.9	18.0	49.1	
<u>% of Trips - Residential</u>				
<u>% of Trips - Commercial (by land use)</u>				
Elementary school			20.0	10.0
Junior high school			20.0	10.0
Employment			35.0	17.5
Commercial			35.0	17.5

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Combined Winter Emissions Reports (Pounds/Day)

File Name: I:\Projects\Active\Wheatland\Johnson Rancho\Technical Reports\Air Quality\Johnson Rancho\Johnson Rancho.urb924

Project Name: Johnson Rancho

Project Location: Feather River AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	3,348.12	459.95	13,294.95	41.21	2,124.06	2,044.53	619,959.68

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	508.96	577.54	4,910.54	11.70	2,188.86	413.60	1,178,222.35

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	3,857.08	1,037.49	18,205.49	52.91	4,312.92	2,458.13	1,798,182.03

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM2.5	CO2
Natural Gas	12.14	157.39	68.14	0.00	0.30	0.30	200,711.66
Hearth	2,510.88	302.56	13,226.81	41.21	2,123.76	2,044.23	419,248.02
Landscaping - No Winter Emissions							
Consumer Products	610.61						
Architectural Coatings	214.49						
TOTALS (lbs/day, unmitigated)	3,348.12	459.95	13,294.95	41.21	2,124.06	2,044.53	619,959.68

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	324.59	371.39	3,163.68	7.57	1,414.37	267.29	761,920.36
Apartments low rise	7.24	8.29	70.60	0.17	31.56	5.96	17,003.19
Elementary school	8.97	9.35	80.61	0.18	34.29	6.48	18,470.07
Junior high school	3.50	3.75	32.04	0.07	13.88	2.62	7,458.98
Employment	58.16	65.26	552.31	1.31	245.41	46.36	131,884.45
Commercial	106.50	119.50	1,011.30	2.40	449.35	84.89	241,485.30
TOTALS (lbs/day, unmitigated)	508.96	577.54	4,910.54	11.70	2,188.86	413.60	1,178,222.35

Operational Settings:

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Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00 Nonresidential Trip % Reduction: 0.00

Analysis Year: 2035 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	4,040.33	9.09	dwelling units	12,121.00	110,179.89	824,725.41
Apartments low rise	22.50	6.83	dwelling units	360.00	2,458.80	18,404.76
Elementary school		1.29	students	3,000.00	3,870.00	19,992.11
Junior high school		1.62	students	900.00	1,458.00	8,093.40
Employment		112.00	acres	197.00	22,064.00	143,108.23
Commercial		400.00	acres	101.00	40,400.00	262,036.47
					180,430.69	1,276,360.38

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	39.9	0.0	100.0	0.0
Light Truck < 3750 lbs	19.1	0.0	99.5	0.5
Light Truck 3751-5750 lbs	19.7	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	80.0	20.0
Life-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.6	0.0	18.8	81.2

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Heavy-Heavy Truck 33,001-60,000 lbs	1.6	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.0	32.5	67.5	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.2	0.0	91.7	8.3

Travel Conditions

	Residential				Commercial	
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
Junior high school				20.0	10.0	70.0
Employment				35.0	17.5	47.5
Commercial				35.0	17.5	47.5

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Combined Annual Emissions Reports (Tons/Year)

File Name: I:\Projects\Active\Wheatland\Johnson Rancho\Technical Reports\Air Quality\Johnson Rancho with Hop Farm\Johnson Rancho with Hop Farm.urb924

Project Name: Johnson Rancho plus Hop Farm

Project Location: Feather River AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	306.56	45.44	695.04	1.93	100.43	96.67	58,787.19

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	109.57	102.95	1,056.18	2.83	492.19	93.01	290,720.28

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	416.13	148.39	1,751.22	4.76	592.62	189.68	349,507.47

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Natural Gas	2.56	33.13	14.39	0.00	0.06	0.06	42,232.99
Hearth	118.70	11.67	624.39	1.93	100.22	96.46	16,463.72
Landscape	10.10	0.64	56.26	0.00	0.15	0.15	90.48
Consumer Products	128.53						
Architectural Coatings	46.67						
TOTALS (tons/year, unmitigated)	306.56	45.44	695.04	1.93	100.43	96.67	58,787.19

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO ₂	PM ₁₀	PM ₂₅	CO ₂
Single family housing	65.38	61.24	631.93	1.70	294.52	55.66	174,103.79
Apartments low rise	2.06	1.88	19.43	0.05	9.06	1.71	5,353.76
Elementary school	3.11	1.63	16.51	0.04	7.51	1.42	4,438.78
Junior high school	1.82	1.09	10.99	0.03	5.07	0.96	2,988.25
Employment	13.23	13.15	133.67	0.36	62.36	11.78	36,784.36
Commercial	23.97	23.96	243.65	0.65	113.67	21.48	67,051.34
TOTALS (tons/year, unmitigated)	109.57	102.95	1,056.18	2.83	492.19	93.01	290,720.28

Operational Settings:

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Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00 Nonresidential Trip % Reduction: 0.00

Analysis Year: 2035 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	4,610.00	9.09	dwelling units	13,830.00	125,714.70	941,007.54
Apartments low rise	35.38	6.83	dwelling units	566.00	3,865.78	28,936.38
Elementary school		1.29	students	3,600.00	4,644.00	23,990.53
Junior high school		1.62	students	1,800.00	2,916.00	16,186.80
Employment		112.00	acres	274.30	30,721.60	199,261.86
Commercial		400.00	acres	140.00	56,000.00	363,218.87
					223,862.08	1,572,601.98

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	39.9	0.0	100.0	0.0
Light Truck < 3750 lbs	19.1	0.0	99.5	0.5
Light Truck 3751-5750 lbs	19.7	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	80.0	20.0
Life-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.6	0.0	18.8	81.2

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Heavy-Heavy Truck 33,001-60,000 lbs	1.6	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.0	32.5	67.5	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.2	0.0	91.7	8.3

Travel Conditions

	Residential				Commercial	
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
Junior high school				20.0	10.0	70.0
Employment				35.0	17.5	47.5
Commercial				35.0	17.5	47.5

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: I:\Projects\Active\Wheatland\Johnson Rancho\Technical Reports\Air Quality\Johnson Rancho with Hop Farm\Johnson Rancho with Hop Farm.urb924

Project Name: Johnson Rancho plus Hop Farm

Project Location: Feather River AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	1,086.20	188.57	703.98	0.03	2.01	1.99	232,419.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	586.61	490.06	5,654.75	16.12	2,696.88	509.62	1,663,717.75

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	1,672.81	678.63	6,358.73	16.15	2,698.89	511.61	1,896,136.76

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM2.5	CO2
Natural Gas	14.00	181.51	78.88	0.00	0.35	0.34	231,413.67
Hearth - No Summer Emissions							
Landscape	112.20	7.06	625.10	0.03	1.66	1.65	1,005.34
Consumer Products	704.30						
Architectural Coatings	255.70						
TOTALS (lbs/day, unmitigated)	1,086.20	188.57	703.98	0.03	2.01	1.99	232,419.01

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	352.20	291.43	3,389.07	9.65	1,613.79	304.97	996,316.43
Apartments low rise	11.28	8.96	104.22	0.30	49.62	9.38	30,637.15
Elementary school	20.22	7.76	87.37	0.25	41.15	7.78	25,401.11
Junior high school	11.45	5.18	58.27	0.17	27.76	5.25	17,102.02
Employment	68.23	62.61	714.12	2.04	341.70	64.56	210,520.21
Commercial	123.23	114.12	1,301.70	3.71	622.86	117.68	383,740.83
TOTALS (lbs/day, unmitigated)	586.61	490.06	5,654.75	16.12	2,696.88	509.62	1,663,717.75

Operational Settings:

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Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00 Nonresidential Trip % Reduction: 0.00

Analysis Year: 2035 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	4,610.00	9.09	dwelling units	13,830.00	125,714.70	941,007.54
Apartments low rise	35.38	6.83	dwelling units	566.00	3,865.78	28,936.38
Elementary school		1.29	students	3,600.00	4,644.00	23,990.53
Junior high school		1.62	students	1,800.00	2,916.00	16,186.80
Employment		112.00	acres	274.30	30,721.60	199,261.86
Commercial		400.00	acres	140.00	56,000.00	363,218.87
					223,862.08	1,572,601.98

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	39.9	0.0	100.0	0.0
Light Truck < 3750 lbs	19.1	0.0	99.5	0.5
Light Truck 3751-5750 lbs	19.7	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	80.0	20.0
Life-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.6	0.0	18.8	81.2

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Vehicle Type	<u>Vehicle Fleet Mix</u>			
	Percent Type	Non-Catalyst	Catalyst	Diesel
Heavy-Heavy Truck 33,001-60,000 lbs	1.6	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.0	32.5	67.5	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.2	0.0	91.7	8.3
<u>Travel Conditions</u>				
Urban Trip Length (miles)	Residential			
	Home-Work	Home-Shop	Home-Other	Commute
	10.8	7.3	7.5	9.5
	16.8	7.1	7.9	14.7
Rural Trip Length (miles)	Commercial			
	Home-Work	Home-Shop	Home-Other	Commute
Trip speeds (mph)	35.0	35.0	35.0	35.0
	32.9	18.0	49.1	
<u>% of Trips - Residential</u>				
<u>% of Trips - Commercial (by land use)</u>				
Elementary school			20.0	10.0
Junior high school			20.0	10.0
Employment			35.0	17.5
Commercial			35.0	17.5

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: I:\Projects\Active\Wheatland\Johnson Rancho\Technical Reports\Air Quality\Johnson Rancho with Hop Farm\Johnson Rancho with Hop Farm.urb924

Project Name: Johnson Rancho plus Hop Farm

Project Location: Feather River AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	3,870.11	530.27	15,335.03	47.54	2,449.94	2,358.20	714,695.60

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	628.12	712.02	6,052.39	14.42	2,696.88	509.62	1,451,528.25

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	4,498.23	1,242.29	21,387.42	61.96	5,146.82	2,867.82	2,166,223.85

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM2.5	CO2
Natural Gas	14.00	181.51	78.88	0.00	0.35	0.34	231,413.67
Hearth	2,896.11	348.76	15,256.15	47.54	2,449.59	2,357.86	483,281.93
Landscaping - No Winter Emissions							
Consumer Products	704.30						
Architectural Coatings	255.70						
TOTALS (lbs/day, unmitigated)	3,870.11	530.27	15,335.03	47.54	2,449.94	2,358.20	714,695.60

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	370.36	423.76	3,609.75	8.64	1,613.79	304.97	869,347.30
Apartments low rise	11.39	13.03	111.00	0.27	49.62	9.38	26,732.79
Elementary school	10.76	11.22	96.73	0.22	41.15	7.78	22,164.09
Junior high school	6.99	7.50	64.07	0.15	27.76	5.25	14,917.95
Employment	80.99	90.87	769.03	1.82	341.70	64.56	183,634.02
Commercial	147.63	165.64	1,401.81	3.32	622.86	117.68	334,732.10
TOTALS (lbs/day, unmitigated)	628.12	712.02	6,052.39	14.42	2,696.88	509.62	1,451,528.25

Operational Settings:

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Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00 Nonresidential Trip % Reduction: 0.00

Analysis Year: 2035 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	4,610.00	9.09	dwelling units	13,830.00	125,714.70	941,007.54
Apartments low rise	35.38	6.83	dwelling units	566.00	3,865.78	28,936.38
Elementary school		1.29	students	3,600.00	4,644.00	23,990.53
Junior high school		1.62	students	1,800.00	2,916.00	16,186.80
Employment		112.00	acres	274.30	30,721.60	199,261.86
Commercial		400.00	acres	140.00	56,000.00	363,218.87
					223,862.08	1,572,601.98

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	39.9	0.0	100.0	0.0
Light Truck < 3750 lbs	19.1	0.0	99.5	0.5
Light Truck 3751-5750 lbs	19.7	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.3	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	80.0	20.0
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.6	0.0	18.8	81.2

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Heavy-Heavy Truck 33,001-60,000 lbs	1.6	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.0	32.5	67.5	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.2	0.0	91.7	8.3

Travel Conditions

	Residential				Commercial	
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
Junior high school				20.0	10.0	70.0
Employment				35.0	17.5	47.5
Commercial				35.0	17.5	47.5

GHG analysis for the Johnson Rancho Project

1. Potential GHG emissions summary:

The following is the potential GHG emissions including URBEMIS modeling analysis and utility usage from the proposed project upon buildout:

Emission Source	CO ₂ emissions (tons/yr)
Area Source ₁	58,787.19
Vehicle Emissions ₁	290,720.28
Utility Usage ₂	149,256.65
Total	498,764.12
¹ Project's Urbemis 2007 modeling results from the ADEIR. ² Includes electric and natural gas CO ₂ emissions. Please see following calculations.	

2. Calculations:

Size of the proposed project

Residential: 14,396 units

Commercial: 131 acres, 65.5 usable acres [based on the Wheatland General Plan floor-to-area ratio (FAR)]

Office: 298.3 acres, 149.2 usable acres (based on the Wheatland General Plan FAR)

Education: 95 acres, 47.5 usable acres (based on the Wheatland General Plan FAR)

Electricity Usage

PG&E CO₂ emission rates for electricity: 0.524 lbs CO₂ per kW-hr

Residential

Average electricity usage for a residential unit¹ per month: 540 kW-hr

CO₂ emissions from residential electricity usage for proposed project per year:

540 kW-hr	0.524 lbs CO ₂	12 months	1 ton	14,396 units	= 24,440.95 tons CO₂ per year (Residential)
1 month - unit	kW-hr	1 year	2,000 lbs	project	

¹ PG&E carbon footprint calculation factsheet.

Commercial

Annual Electricity Intensity Based On Principal Building Activity²: 14.3 kWh/ft²

CO₂ emissions from commercial electricity usage for proposed project per year:

14.3 kW-hr ft ² - year	0.524 lbs CO ₂ kW-hr	1 ton 2,000 lbs	47.5 acres project	43,560 ft ² acre	= 7,752.09 tons CO₂ per year (Commercial)
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Office

Annual Electricity Intensity Based On Principal Building Activity³: 17.3 kWh/ft²

CO₂ emissions from office electricity usage for proposed project per year:

17.3 kW-hr ft ² - year	0.524 lbs CO ₂ kW-hr	1 ton 2,000 lbs	149.2 acres project	43,560 ft ² acre	= 29,458.06 tons CO₂ per year (Office)
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Education

Annual Electricity Intensity Based On Principal Building Activity⁴: 11 kWh/ft²

CO₂ emissions from education electricity usage for proposed project per year:

11 kW-hr ft ² - year	0.524 lbs CO ₂ kW-hr	1 ton 2,000 lbs	47.5 acres project	43,560 ft ² acre	= 5,963.15 tons CO₂ per year (Education)
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Total CO₂ emissions from electricity usage:

$$(24,440.95 + 7,755.40 + 29,470.62 + 5,965.69) = \mathbf{67,632.66 \text{ tons CO}_2 \text{ per year (Total Project)}}$$

Natural Gas Usage

PG&E CO₂ emission rates for natural gas: 13.446 lbs CO₂ per therm

Residential

Average natural gas usage for a residential unit⁵ per month: 45 therms

² California Climate Action Registry General Reporting Protocol, Version 3.1,
http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf, accessed September 9, 2010.

³ *Ibid.*

⁴ *Ibid.*

CO₂ emissions from residential natural gas usage for proposed project per year:

45 therms	13.446 lbs CO ₂	12 months	1 ton	14,396 units	= 52,263.52 tons CO₂ per year (Residential)
1 month - unit	1 therm	1 year	2,000 lbs	project	

Commercial

Average Annual Natural Gas Consumption Per Consumer ⁶ for commercial: 591 thousand cubic ft

The project assumes 220 commercial consumers

65.5 usable acres	43,560 ft ² acre	1 consumer 13,000 ft ² ⁷	= 220 consumers
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CO₂ emissions from commercial natural gas usage for proposed project per year:

591,000 cubic ft	1 therm	13.446 lbs CO ₂	1 ton	220 consumers	= 8,740.60 tons CO₂ per year (Commercial)
year - consumer	100 cubic ft	1 therm	2,000 lbs		

Office

Average Annual Natural Gas Consumption Per Consumer ⁸ for office: 591 thousand cubic ft

The project assumes 436 office consumers

149.2 usable acres	43,560 ft ² acre	1 consumer 14,900 ft ² ⁹	= 436 consumers
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⁵ PG&E carbon footprint calculation factsheet.

⁶ Energy Information Administration, Official Energy Statistics from the U.S. Government, 2007 Number of Natural Gas Consumers, http://tonto.eia.doe.gov/dnav/ng/ng_cons_num_dcu_SCA_a.htm, accessed September 24, 2009.

⁷ US Energy Information Administration, Independent Statistics and Analysis, Commercial Buildings Energy Consumption Survey, 2001, http://www.eia.doe.gov/emeu/consumptionbriefs/cbecs/pbawebiste/retailserv/retserv_howlarge.htm, accessed September 9, 2010.

⁸ Energy Information Administration, Official Energy Statistics from the U.S. Government, 2007 Number of Natural Gas Consumers, http://tonto.eia.doe.gov/dnav/ng/ng_cons_num_dcu_SCA_a.htm, accessed September 24, 2009.

⁹ US Energy Information Administration, Independent Statistics and Analysis, Commercial Buildings Energy Consumption Survey, 2001, http://www.eia.doe.gov/emeu/consumptionbriefs/cbecs/pbawebiste/retailserv/retserv_howlarge.htm, accessed September 9, 2010.

CO₂ emissions from office natural gas usage for proposed project per year:

591,000 cubic ft	1 therm	13.446 lbs CO ₂	1 ton	436 consumers	= 17,322.28 tons CO₂ per year (Office)
year - consumer	100 cubic ft	1 therm	2,000 lbs		

Education

Average Annual Natural Gas Consumption Per Consumer¹⁰ for education: 591 thousand cubic ft

The project proposes to have 8 education facilities, therefore assumes 8 consumers

CO₂ emissions from education natural gas usage for proposed project per year:

591,000 cubic ft	1 therm	13.446 lbs CO ₂	1 ton	8 consumers	= 317.86 tons CO₂ per year (Education)
year - consumer	100 cubic ft	1 therm	2,000 lbs		

Total CO₂ emissions from natural gas usage:

$$(52,263.52 + 8,740.60 + 17,322.28 + 317.86) = \mathbf{78,644.26 \text{ tons CO}_2 \text{ per year (Total Project)}}$$

Total CO₂ emissions from utility usage from the proposed project:

$$(67,632.66 + 78,644.26) = \mathbf{146,276.92 \text{ tons CO}_2 \text{ per year}}$$

¹⁰ Energy Information Administration, Official Energy Statistics from the U.S. Government, 2007 Number of Natural Gas Consumers, http://tonto.eia.doe.gov/dnav/ng/ng_cons_num_dcu_SCA_a.htm, accessed September 24, 2009.